NAVY AND MARINE CORPS PUBLIC HEALTH CENTER UPDATE

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NMCPHC Changes Command

By NMCPHC Public Affairs

Command of the Navy and Marine Corps Public Health Center (NMCPHC) changed when Capt. Todd Wagner relieved Capt. Scott Jonson during a ceremony conducted at Naval Medical Center Portsmouth Aug. 19.

Rear Adm. Kenneth Iverson, commander, Navy Medicine East, presided over the ceremony.

In his remarks, Iverson cited Jonson's leadership as well as the tremendous impact NMCPHC's contributions have on Navy and Marine Corps mission readiness.

Rear Adm. Kenneth Iverson (left), commander, Navy Medicine East, presides over Navy and Marine Corps Public Health Center's change of command ceremony when Capt. Todd Wagner relieved Capt. Scott Jonson as commanding officer on Aug. 19, 2016 at Naval Medical Center Portsmouth. (Photo by NCMPHC Public Affairs)

"Captain Jonson's superlative leadership has led to transformation changes that positively impact the health and wellness for tens of thousands Navy, Marine Corps, [Department of Defense] personnel and their family members around the world," said Iverson. "Navy and Marine Corps Public Health Center is not only a preferred choice for global public health and preventive health services, but also the preferred choice for its staff to work."

Iverson presented Jonson with the Legion of Merit for his leadership in support of Navy Public Health and the Navy Medicine mission. *(cont. on page 2)*

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"It's truly been an honor to serve as commanding officer of the Navy and Marine Corps Public Health Center," said Jonson, who will be assigned to Naval Medical Center Portsmouth upon completion of his tour of duty as NMCPHC commanding officer. "I'm very proud of our enterprise and the amazing work that's been conducted by our dedicated personnel."

The new NMCPHC commanding officer, Wagner, is a native of Grand Junction, Colorado, graduated in 1986 from the U.S. Naval Academy and began his Navy career as a surface warfare officer aboard amphibious assault ship USS Peleliu (LHA 5).

Wagner was later accepted into the Naval Health Profession Scholarship Program and graduated from Michigan State University College of Osteopathic Medicine with honors in 1998.

Wagner's served as an undersea medical officer at the Explosive Ordnance Disposal Mobile Unit 11, Whidbey Island, Washington and subsequently completed a Preventive Medicine Residency at the University of California, San Diego. After completing his residency, Wagner's assignments included serving as preventive medicine officer, II Marine Expeditionary Force, Camp Lejeune North Carolina; clinical consultant as well as operational and staff liaison at the Armed Forces Medical Intelligence Center at Fort Detrick in Frederick, Maryland; and officer in charge, Navy Environmental and Preventive Medicine Unit 2, Norfolk.

During his tour with II Marine Expeditionary Force, Wagner completed two deployments to Iraq as the preventive medicine officer for Multinational Forces Iraq. He later served as director for Public Health, Naval Hospital Camp Pendleton, California, and most recently as executive officer, Naval Hospital Rota, Spain.

Upon assuming command, Wagner thanked Jonson for his exceptional leadership and contributions to public health, while praising the entire NMCPHC enterprise for being at the forefront of public health policy development and leadership.

"I have seen the direct results of Navy and Marine Corps Public Health Center's work in serving our service members and their families in every corner of the world on sea, on land, in the air and even below the surface," said Wagner. "To be a given

Capt. Todd Wagner, commanding officer, NMCPHC, speaks at the NMCPHC change of command ceremony when he relieved Capt. Scott Jonson on August 19, 2016 at Naval Medical Center Portsmouth. (Photo by NCMPHC Public Affairs)

the opportunity to lead this esteemed group in this herculean effort is truly inspiring."

NMCPHC is part of the Navy Medicine team, a global health care network of 63,000 Navy medical personnel around the world who provide high-quality health care to more than one million eligible beneficiaries. Navy Medicine personnel deploy with Sailors and Marines worldwide, providing critical mission support aboard ship, in the air, under the sea and on the battlefield.

Read the full story here: **http://www.navy.mil/submit/display.asp?story_id=96313**

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The Commanding Officer's Corner

By Capt. Todd Wagner, NMCPHC

Welcome Shipmates to the latest edition of the NMCPHC Newsletter!

As this is my inaugural section of the newsletter, please first allow me to say thanks to all throughout the NMCPHC enterprise for making my arrival and transition to CO of NMCPHC so smooth and gracious. You have truly greeted me with open arms and for that I am immensely grateful. I would also like to thank my predecessor, Capt. Scott Jonson, for his excellent leadership over the past two years and for handing over the reins of such a high-functioning and world-class organization. There are so many topics to touch on but I will endeavor to hit some of what I think are some particularly timely and important items.

The tremendous value of our mission in ensuring mission readiness through disease prevention and health promotion in support of the National Military Strategy has never been more important. Our mission not only directly impacts the operational warfighter but also the families, retirees and all of our beneficiaries being seen in our military treatment facilities (MTF)

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Welcome Command Master Chief Burmeister

"I'm extremely pleased and humbled to be a part of such a distinguished group of public health professionals. As your CMC, I will do my best to provide support for all levels of the organization."

- Master Chief Hospital Corpsman Marsha Burmeister, NMCPHC CMC

NMCPHC welcomes Master Chief Hospital Corpsman (HMCM) (SW) Marsha E. Burmeister as she assumes the role of Command Master Chief (CMC).

CMC Burmeister is a native of Wadesville, Indiana and enlisted in the United States Navy in January 1990. She completed Recruit Training at Orlando, FL and Hospital Corpsman "A" School at Great Lakes, IL. She was a PSI at Naval Medical Clinic, Quantico, VA while awaiting Advanced Laboratory "C" School at Bethesda, MD.

Upon graduation, she reported for duty at Naval Hospital Camp Lejeune, NC where she served as an Advanced Laboratory Technician. She reported to USS PUGET SOUND (AD-38) home ported in Norfolk, VA, only to begin the decommissioning process upon her arrival. She was transferred to Naval Medical Center Portsmouth, Portsmouth, VA where she served as a Laboratory Technician, Command Drug and Alcohol Program Advisor and Leading Chief Petty Officer (LCPO)/Assistant Product Line Leader of Patient and Guest Relations and Descendant Affairs Product Line. She served as a Recruit Division Commander, Instructor,

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Facilitator, Recruit Division Commander "C" School LCPO and Ship's LCPO while at Recruit Training Command, Great Lakes, IL. She transferred to Naval Medical Center Portsmouth, Portsmouth, VA and served as the Directorate of Medical Services Senior Enlisted Leader. She deployed as an Individual Augmentee to Expeditionary Medical Facility Kuwait where she served as the LCPO at Camp Arifjan Troop Medical Clinic. Upon her return, she served as the Directorate of Nursing Services Senior Enlisted Leader. She received Global War on Terrorism Support Assignment orders to Expeditionary Combat Readiness Center, Norfolk, VA where she forward deployed to Bagram, Afghanistan. She served as the Cooperative Medical Assistance, Joint Operational Team NCOIC where she served as the Operations Chief and a medical provider. She transferred to Naval Medical Center Portsmouth, Portsmouth, VA where she served as the Deputy Command Master Chief for Navy Medicine East.

As a Senior Chief, CMC Burmeister served as the Health Services and Health Dental Departments LCPO onboard USS MESA VERDE (LPD-19) home ported in Norfolk, VA. She was transferred to Branch Health Clinic Naval Support Activity Norfolk, Norfolk, VA where she was redirected to Naval Medical Center Portsmouth, Portsmouth, VA. As a Master Chief, CMC Burmeister served as the Directorate for Clinical Support Services and Directorate for Primary Care and Branch Health Clinics Senior Enlisted Leader. She transferred to her current position as Command Master Chief Navy and Marine Corps Public Health Center. She is a graduate of Campbell University and the Navy Senior Enlisted Academy and has earned her Enlisted Surface Warfare and Master Training Specialist designations.

Her decorations include the Defense Meritorious Service Medal, Meritorious Service Medal, Navy Commendation Medal (six awards), Navy Achievement Medal (four awards) and various unit and campaign awards.

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throughout the world. Having just come from an overseas MTF, I have seen first-hand, the direct impact NMCPHC's work has on the patients we are so honored to take care of. Whether it is utilizing clinical outcome data, better understanding the population impact of a disease or prevention strategy, or application of health promotion programs (as just three examples), our important work has never been more valued or needed.

Tied directly into the execution of our mission is the application of strategic planning. I have been tremendously impressed in my initial review of a very mature strategic planning process and think that the three goals selected by the Strategic planning team of Excellence, Relevance and a Valued Workforce could not have been more relevant to or better aligned with both NME and BUMED strategic planning objectives. I thank the Strategic Planning team for the work that has been done to put this into place and look forward to seeing the "fruits of the labor" as we continue to review and implement numerous processes located in each of the three pillars.

So who do we do all of this great work for? Our valued customers of course! These customers are both external and internal to the organization. Our external customers have been and continue to be numerous and at very high levels in the DoD; Secretary of the Navy, Navy Inspector General, Chief of Naval Installations and Naval Facilities Command just to name a very few. So as you can see, our customers have requests from all over the world and in virtually every military setting. Your work indeed matters! Additionally, we continue to work collaboratively across departments and directorates with and for our internal customers to keep things moving forward as an organization. As was put forward to me by a former CO, "if everyone puts an oar in the water and we all row in the same direction, we can all move forward with a bit more ease!" The NMCPHC crew team is moving forward on all cylinders!

As I mentioned in my Change of Command comments, I am honored to be your Commanding Officer and to serve alongside each and every one of you in performing our most noble mission. Thanks for what you do every day!

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The Beauty of Sleep

By NMCPHC Health Promotion and Wellness Staff

Did you know that there is a single activity, that when performed once a day for the right amount of time and quality can improve memory and mood, decrease risk of high blood pressure and heart disease, and lead to better job performance?

In addition, the hormones produced during sleep can strengthen the immune system, increase muscle growth, and prevent weight gain.[1] Whether you follow a traditional schedule or work overnight shifts and sleep during the day, your good "night's" sleep can provide all of those benefits. It is recommended that adults get at least seven to eight hours of consecutive sleep in a 24 hour period.[2]

While many view insufficient sleep as a way of life, lack of sleep can negatively impact how you function throughout the day.[1] Not getting enough sleep can lead to:

- Slower reaction times and decision making[1]
- Impaired memory[3]
- Irritability and feelings of depression[3]
- Weight gain, particularly in younger individuals[4]
- Weakened immune system[1]
- Negative moods and lack of motivation[1]
- Increase in feelings of sleepiness during the day[3]

These negative side effects of sleep loss can lead to decreased performance, resilience, and readiness for Sailors and Marines.

While it may not be possible to get seven to eight hours of rest every night, there are things you can do to increase both the amount and quality of your sleep:

- Maintain a consistent sleep schedule[1]
- Avoid stimulants such as caffeine and nicotine, particularly later in the day[1]
- Avoid alcohol immediately before bed[1]

Photo by Corporal Reece Lodder

- Avoid naps in the late afternoon or evening, and limit naps to no more than 25 to 30 minutes[5]
- Maintain a good sleep environment. Keep your room cool and minimize bright lights and noise, if possible[5]
- Remove distractions from your room (e.g. Televisions, computers, smart phones, etc.)[1]
- Make exercising a priority, just not within two to three hours of bedtime[1]
- Do not stay in bed if you cannot fall asleep. If you are not able to fall asleep after 20 minutes, get up and do something relaxing until you are sleepy[1]

For more information about The Beauty of Sleep, visit **http://www.med.navy.mil/sites/nmcphc/Documents/health-promotion-wellness/general-tools-and-programs/hp-toolbox/The-Beauty-of-Sleep.pdf**

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Recapturing Trauma Patients for Operational Readiness and Cost Reduction

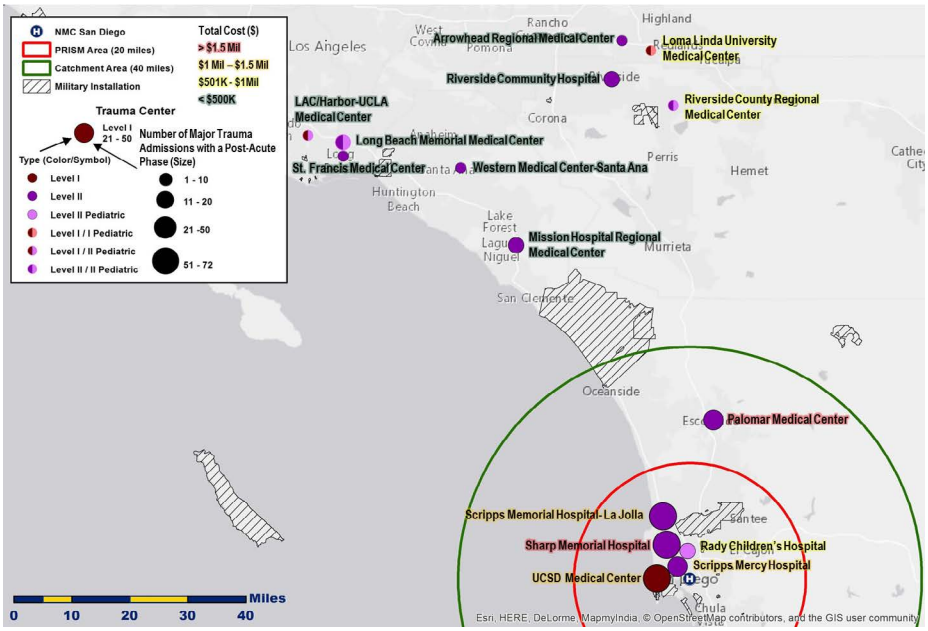
By NMCPHC Health Analysis Staff

Talk to elite athletes and they will tell you to train the way you want to perform. The off-season isn't a vacation, it's preparation. This also holds true for medical staff.

As Jennifer Town, Trauma Program Manager at Naval Medical Center San Diego (NMCSD) frames it, "Now that the war has slowed down, there is a need…for us to maintain skill sets and sustain the infrastructure that was put in place for the combat casualties."

Skills maintenance is essential to readiness. The amputations treated, arteries mended, and burns debrided during times of relative peace add up to lives saved during times of war.

The Health Analysis (HA) Department applied its unique capability to analyze regional trauma data to support NMCSD in deciding how best to integrate with the regional trauma system, for the sake of readiness and to recapture purchased care. This involved examining the number and cost of major trauma with a post-acute phase that occurred within two hours of NMCSD.



The analysis was straightforward, but presented a challenge in getting administrative data used for reimbursement to identify trauma cases and derive estimates of cost and recapture potential.

Despite the challenge, HA combined its clinical, epidemiological and geospatial expertise to blend data from disparate sources into a masterpiece. The analysis started with the big picture by looking at all trauma, and then drilled down to major trauma with a post-acute phase; this process helped keep the information timely and relevant. Within 30 days of the request, HA gave NMCSD actionable information. As the project progressed, the deeper insights painted an ever more detailed picture of locations, demographics, costs, diagnoses, bed days, and other characteristics.

HA also examined clinical, business, and financial factors that affect whether patients could receive follow-on care at NMCSD. These include how sick individuals are, NMCSD's capability to care for them, and financial incentives for civilian trauma centers to retain patients.

The detailed information HA delivered identified $12 million in recoupable expenses and 567 potential recapture opportunities.

NMCSD's CO stated, "The trauma information is a work of art. It is going to provide us very powerful information regarding the patients…we can hopefully bring back to NMCSD for their care."

To learn more about how the Health Analysis Department can help you improve clinical outcomes and reduce unnecessary costs, email: **usn.hampton-roads.navmcpubhlthcenpors.list.nmcphc-haprojreq@mail.mil**

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Medical Team Conducts Joint Exercise ARDENT SENTRY 2016

By Lt. Palm, Navy and Marine Corps Public Health Center

Joint Exercise ARDENT SENTRY 2016 (AS16) was executed June 7-16. ARDENT SENTRY is a Joint Chiefs of Staff (CJCS) approved, U.S. Northern Command (USNORTHCOM) sponsored and Naval Forces North (NAVNORTH) supported disaster response exercise carried out in Washington, Oregon and California.

AS16 scenario threads focused on earthquake disaster response in the Pacific Northwest providing readiness training to west coast Defense Support of Civil Authorities (DSCA). Training included establishment of DSCA command and control structure in support of a catastrophic natural disaster to a fleet concentration area, collaborative planning to provide naval sea based solutions to support DSCA operations and post disaster service recovery procedures. In parallel, Fuerzas Amigas 16 (FA16) was conducted concurrently with AS16 and focused on relationships between Department of Defense (DoD) and Mexico during domestic disaster response activities.

The ARDENT SENTRY medical team comprised of personnel from Navy Environmental and Preventive Medicine Unit (NEPMU) 2, Naval Medical Center Portsmouth, NMCPHC and US Fleet Forces (USFF) Command. The exercise provided a platform for the medical team to work in a fast-paced disaster situation which required critical thinking and familiarity of emergency support functions (ESF 8) by identifying and meeting the medical needs of victims of major disasters or public health/medical emergencies. The team assessed DoD and civilian medical facilities and medical operation concepts for federal and civilian medical treatment facilities, participated in various working groups and prepared daily medical briefs to assist the USFF Commander. The teams' synchronized efforts ensured timely, effective decisions were made to deliver exceptional health services via the National Disaster Medical System (NDMS) and provided assistance to Federal Emergency Management Agency (FEMA) in response to a major natural disaster.

Medical team of ARDENT SENTRY 2016 included personnel from NEPMU-2, Naval Medical Center Portsmouth, NMCPHC and USFF Command. (Photo by USFF Public Affairs)

Controlling a Formidable Adversary: Disease-Transmitting Aedes Mosquitoes

By Lt. Cmdr. James Dunford, entomologist, Navy and Marine Corps Public Health Center

Prevention of mosquito-borne diseases plays an important role in the success of military operations. Emerging and re-emerging infectious diseases such as dengue, chikungunya and Zika virus are becoming increasingly more common in the Western Hemisphere.

The primary vectors implicated in the spread of these viruses, *Aedes aegypti* (yellow fever mosquito) and *Aedes albopictus* (Asian tiger mosquito), occur commonly throughout a good portion of the U.S. and their distributions are expanding globally. On top of this, there are more than 100 major military installations in the U.S. within the range of these two *Aedes* species. Service members or travelers returning from regions where these viruses are prevalent increase the chance of local transmission if infected upon their return to the U.S.

Photo courtesy of Navy.mil

U.S. federal, state and local health agencies have been preparing for potential local transmission of these diseases. For example, the Centers for Disease Control and Prevention has brought together experts and political officials to draft a Zika Action Plan, and the Department of Defense (DoD) has aligned its prevention strategy with this plan to implement a comprehensive, coordinated approach to reduce the chance of local, sustained transmission. Within the Department of Navy, we've used this plan to organize key intra- and interagency personnel to initiate a response that involves installation commanders, state/local public health officials, emergency management personnel, and vector control specialists, to name a few. We've also been working very hard to distribute information to Sailors, Marines and their families about Zika virus and ways to reduce exposures.

Many homes have screens, doors and other barriers to prevent mosquitoes from entering and biting, and permethrin-treated uniforms or clothing and several different EPA-approved insect repellents can greatly reduce exposures. To further prevent the spread of these viruses, we also recommend conducting personal or more effective community-wide source reduction campaigns that include eliminating trash and standing water where *Aedes* mosquitoes breed. Our preventive medicine personnel and state/local mosquito control programs have also increased mosquito surveillance efforts using highly specialized traps. These personnel have been trained to identify mosquito species of concern and determine where and when control activities should be initiated, employing targeted efforts before disease transmission occurs.

While stationed at the Navy Entomology Center of Excellence (NECE), I was able to evaluate a variety of novel and existing control technologies, and NECE personnel continue to work alongside international and domestic vector control specialists to deliver the most effective and economical countermeasures

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Population Health Share Fair: Fostering Collaboration

By NMCPHC Population Health Staff

A subject matter expert from the EDC shares the details of a recent project with fellow colleagues. (Photo by NMCPHC Public Affairs)

The Population Health (PH) Directorate recently held an information sharing event where staff showcased projects from each PH Department: EpiData Center (EDC), Health Analysis (HA), and Health Promotion and Wellness (HPW). NMCPHC staff perused 10 posters to learn and ask questions about their colleagues' work.

The Share Fair event increased awareness of PH's excellent and relevant work throughout the command. The discussions promoted collaboration among peers and sparked new ideas on how the departments could work together.

The event is part of PH's strategy to facilitate more collaboration and networking throughout the directorate. This effort encourages staff to share information and contribute insights through informal discussions with their peers. As a result, the departments have expanded their partnerships on projects which help address public heath challenges.

For example, a recent networking activity helped link ongoing work in injury prevention and surveillance. Through the activity, staff identified an opportunity to incorporate HA's clinical analysis into EDC's ongoing injury surveillance. Meanwhile, HPW was engaging with Semper Fit to support their injury prevention efforts. During a meeting, staff shared what they discovered while networking which helped make the connection between each effort. Since then, the departments have determined how to use the surveillance and analytics capabilities to measure the effectiveness of the injury interventions implemented through Semper Fit.

For more information about Population Health, visit **http://www.med.navy.mil/sites/nmcphc/population-health/Pages/default.aspx**

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to prevent exposures to disease-transmitting mosquitoes.

The DoD has implemented a specific surveillance plan on its installations for *Aedes* mosquitoes and has issued guidance to have Zika-transmitting mosquitoes tested for the virus. While clinical surveillance for Zika is paramount in tracking the disease, this additional measure may strengthen our ability to detect the virus in the environment should Zika be circulating locally. This surveillance method has been used to track West Nile virus for some time, but it is not clear how effective it will be for diseases such as dengue, chikungunya, or Zika. To that end, my colleagues and I have initiated mosquito pathogen research in the Caribbean to uncover the role mosquitoes play in transmission.

Funded by the Armed Forces Health Surveillance Branch, Global Emerging Infections Surveillance and Response System, we will investigate vector capacity and competence in order to better understand the transmission ecologies of dengue, chikungunya and Zika viruses in this part of the world.

For more information on the diseases transmitted by *Aedes* mosquitoes, visit the Navy and Marine Corps Public Health Center's **Chikungunya** and **Zika** pages.

For more information regarding NMCPHC's Preventive Medicine Program and Policy Support department, visit: **http://www.med.navy.mil/sites/nmcphc/program-and-policy-support/Pages/default.aspx**

The Antimicrobial Drones: Advancing the Fight Against Tuberculosis

By Lt. Rebecca Pavlicek, Ph.D., NMRC-Asia, and Lt. Cmdr. Tupur Husain, Ph.D., NMCPHC Expeditionary Preventive Medicine

Tuberculosis, or TB, is a bacterial infection caused by the bacterium *Mycobacterium tuberculosis*. While a wide variety of symptoms can occur, most individuals present with respiratory complications. There are more than 9,000 cases annually in the U.S. alone.

The earliest example of TB from the ancient world is speculated to have caused the death of King Tutankhamen more than 1300 years B.C., although some scholars also believe he may have actually died from malaria. After King Tut, other noteworthy people throughout history who were afflicted with TB or eventually died from the disease include James Monroe, Andrew Jackson, Anders Celsius, Francois Voltaire, Simon Bolivar, Edgar Allan Poe, Frederic Chopin, Fyodor Dostoyevsky, and others.

> **“Currently, an estimated 8.9 million people across the world are infected with TB annually and 1.5 million people die from TB each year.”**

Currently, an estimated 8.9 million people across the world are infected with TB annually and 1.5 million people die from TB each year. Approximately one-third of the world is either latently or actively infected with TB. These numbers have been further compounded by the persistence of multidrug resistant (MDR) strains causing people to be carriers of TB without even knowing it. When populations of people with MDR strains of TB move from place to place and country to country, they unknowingly carry the disease with them causing it to spread.

Although incidents of TB infection remain low in the general U.S. population, members of the Armed Forces may be at a unique risk for infection. As the U.S. military continues to engage in deployments and other military activities in TB-endemic countries, service members may be put into close contact with TB-infected individuals during residence in group settings such as military barracks, basic military training, onboard Navy ships, and while living with host nation personnel in embedded training or counterinsurgency exercises. Due to the highly communicable nature of TB, just one active case can warrant the time and expense of testing thousands of individuals.

At the moment, there are many advanced capabilities that have emerged to help diagnose TB. For example, the NMCPHC subordinate unit microbiology labs all have a Cepheid GeneXpert, a fully automated diagnostics technology that has streamlined sample testing for diagnosing a TB infection and determining the drug resistance profile.

While there is not yet a vaccine for TB beyond Bacillus Calmette-Guerin (BCG) vaccine, which is unable to meet the minimum standard of protection in the U.S., rifampicin and isoniazid are available as the most commonly administered drugs that have been used to treat the disease. However, just with any drug, the potential for multi drug resistance (MDR) and extensive drug resistance (XDR) is a concern when treating TB. There are certain drugs currently being tested to overcome drug resistance such as TCA1, a small bactericidal active molecule screened from thousands, and lassomycin, which could offer promise in that they use independent acting mechanisms against the bacteria that are unique to their molecular structure.

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NMCPHC Revolutionizing the Future of TB Treatment

Lt. Cmdr. Tupur Husain, Ph.D., a subject matter expert in NMCPHC's Expeditionary Platforms for the Preventive Medicine Directorate, has been conducting research on complex medical challenges for several years and is a collaborator with Lt. Rebecca Pavlicek, Ph.D. at Navy Medical Research Center (NMRC)-Asia. One of his hypotheses to advance the fight against TB includes the development of an inhaler-like device to disperse an engineered bacteriophage-based therapeutic mist.

Bacteriophages are viruses that infect and ultimately destroy bacteria. This means an engineered bacteriophage could be directed to go after a specific, harmful bacteria while not harming the healthy host cells of an infected person. Macrophages are white blood cells that engulf and digest foreign substance and microbes. TB however presents an additional challenge because it resides in host macrophage cells and could thereby become capable of hiding from or evading a bacteriophage based system.

Photo by MCS2 James R. Evans

This challenge has redirected Lt. Cmdr. Husain's attention to focus on designing a liposome based system to help fight against TB. To understand how this would work, Lt. Cmdr. Husain says, "Think of the liposome like a bubble or pod. We would first load or pack the liposome with TCA1 and lassomycin or therapeutic recombinant proteins. In order to make sure these liposomes are specifically directed at the macrophages we could 'mannosylate' or tag them with specific molecules that would make them hone in on macrophages with receptors, which in effect would be "beacons" for those tags. To put it in more practical terms, think of the modified liposome as a sophisticated microscopic drone with a targeting system, the drug as the payload it carries, and the receptor on the surface of the macrophage as the GPS coordinates."

Beyond that, some cost effective systems (important when it comes to testing thousands at a time) that can help aid in the fight against TB include the MTT colorimetric assay. This is a relatively "low complexity system" for biological laboratories that is generally used to monitor cells in vitro, including infected cells. While this may seem like a "step backward" to some, in the case of TB it has real merit. Data from this type of study could also be used to correlate with the Cepheid GeneXpert thus reenforcing data obtained utilizing GeneXpert, which would enable researchers to better evaluate thresholds in achieving anti-TB toxicity by such methods.

Concerns may arise if testing occurs using the virulent Erdman Mtb strain at our laboratories which may require a Biosafety Level 3 (BSL-3) laboratory. There are a number of attenuated strains that can be worked with in a basic clinical laboratory to test novel diagnostics, therefore a solid initial 'proof of concept' foundation could be established in a highly safe working environment without the need for BSL-3 conditions.

Ensuring patients are following a healthy diet and lifestyle is also critical as additional studies have shown that supplementing Vitamin D into the diet can help fight TB. However, this should not be regarded as a treatment for the disease.

"The microbiology community has made significant progress in recent years and I see a bright future for the fight against TB by overcoming persistent hurdles and making more strides forward, but only if these types of bold cutting edge solutions can be pursued. The merging of our innovative ideas in Preventive Medicine at NMCPHC with the efforts of collaborating military public health scientists at other sites around the world, such as NMRC-Asia, has the potential to definitively reshape a lasting TB therapy for the 21st century" said Lt. Cmdr. Husain.

Learn more about NMCPHC Expeditionary Platforms: **http://www.med.navy.mil/sites/nmcphc/expeditionary-platforms/Pages/default.aspx**

How Resting Metabolic Rate Affects Your Health

By Ruel C. Nisperos, MPH, & Dr. Regina L. Pointer, MHA, DPA, Navy Environmental and Preventive Medicine Unit Five

Have the concerns of losing or gaining weight come across your mind? Have you thought there might be contributing factors that may not only stem from dieting and exercising?

There might be an answer once you begin to understand how the process of metabolism plays a key role. Metabolism is a natural process within your body, where calories are constantly being utilized for energy (Mayo Clinic, 2014). Even a body at rest requires calories due to active bodily functions occurring from breathing, to the breakdown of food during digestion (Schmidler, 2015). This process of energy being utilized at rest is defined as your resting metabolic rate (RMR).

> **"Becoming aware and tracking your RMR to meet specific health goals (e.g. fat loss, weight management, training) can be highly beneficial."**

Becoming aware and tracking your RMR to meet specific health goals (e.g. fat loss, weight management, training) can be highly beneficial if you are maintaining, exceeding, or decreasing your caloric consumption.

Before planning a regimen focusing on maintaining, exceeding, or decreasing your calories for health or training goals, there are three things to keep in mind and can be recommended:

1) Understanding how RMR plays a role on your health.

2) Being aware that everyone has a different RMR.

3) Utilizing metabolism screenings in taking a personal look on your metabolic needs.

First, your RMR is a calorie marker for the body that can be used to aim for calorie goals that are above or under your metabolism rate. For example, an individual with an RMR of 2,000 calories has a goal of losing weight. In order for this individual to meet their weight loss goals they should consume less than 2,000 calories per day. This principle also applies to someone who is trying to gain weight with an RMR level of 2,500 calories, which would lead to consuming more calories above 2,500.

Second, everyone has a different RMR where factors such as sex, age, hereditary factors, and other characteristics affect levels (Mayo Clinic, 2014). For example, a friend who is an athlete, 6 feet tall, and has an RMR of 3,000 calories may not mean that their colleague of a sedentary lifestyle at a height of 5'2" is at the same level.

Lastly, assessing your metabolism through screening is beneficial in accurately determining your RMR and planning for specific health goals. The RMR screening begins with a handheld device that you

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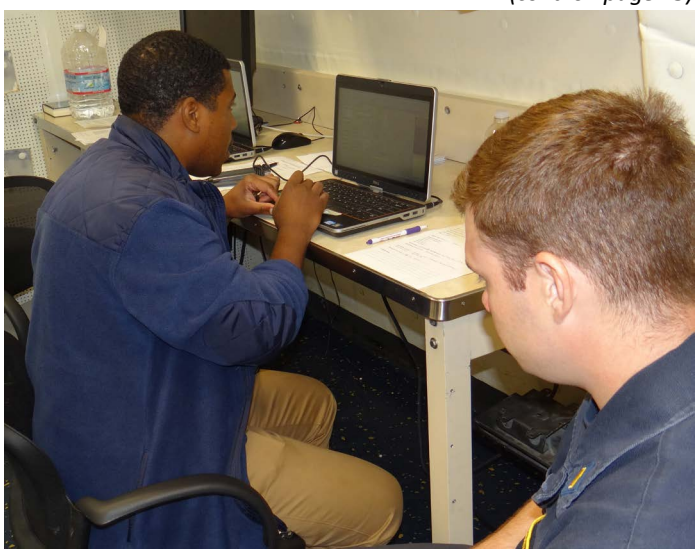

RMR is documented; technician explains personal health recommendations based on results. (Photo by Ruel C. Nisperos)

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Upcoming NMCPHC Trainings and Conferences

- **27 September:** Influenza Surveillance in the DoD
- **28 September:** Promoting Sexual Health in Military Populations
- **29 September:** STI 101 for Non-Clinicians
- **29 September:** Management of the STI Patient
- **25 October:** Making the Most of ESSENCE
- **27 October:** Navy Medicine Long Acting Reversible Contraception (LARC) Training

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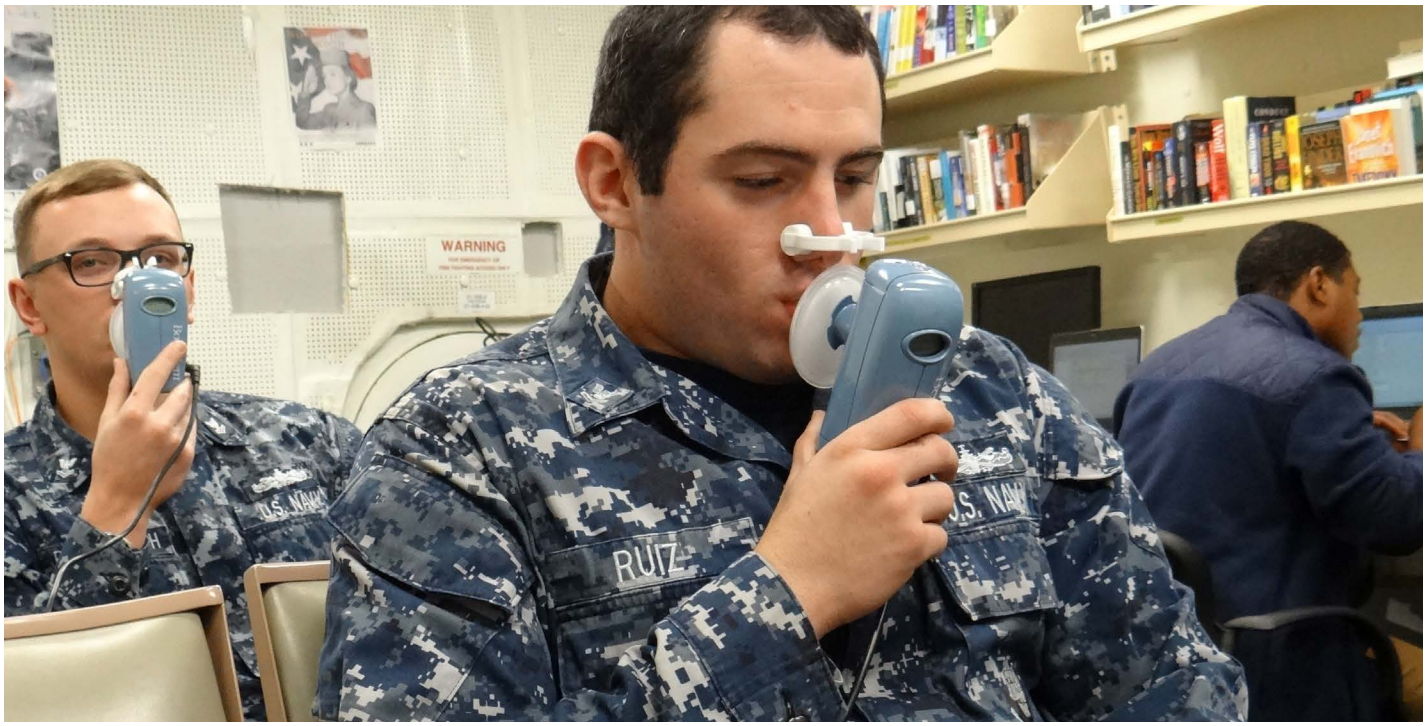
breathe into while having a clip on your nose, where it only allows a one-way breathing pathway. Next, this allows an exchange of oxygen and carbon dioxide into the device that analyzes your RMR (Schmidler, 2015). Some devices come preinstalled with programs that provide a full overview of health recommendations based on your RMR level. After a brief waiting period is completed the device calculates the numerical value that accurately represents your RMR. After acquiring knowledge and the accurate number of calories needed to function, planning can begin for a regimen in meeting health or training goals.

Moreover, most bodily processes, organs, and muscles in the body require some level of calories in order to function. It is important to understand that the amount calories consumed affects the overall functionality of your body. Additionally, a measurable and attainable health goal pertaining to your RMR should include components of a planned regimen of physical activity and a balanced diet. In result, becoming more in tune with your bodily energy requirements and steps on how to meet those needs paves the foundation for planning a proper health regimen and better perspective on your overall health.



Sailors breathe into a device to measure RMR level. (Photo by Ruel C. Nisperos)

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Preventive Medicine Unit Hosts Operational Medicine Zika Workshop

By Lt. Sarah Godwin, Navy Environmental and Preventive Medicine Unit Two, Public Affairs

The Navy Environmental and Preventive Medicine Unit Two (NEPMU-2) hosted an Operational Medicine Zika Workshop, May 25, for Navy public health professionals from across the Mid-Atlantic region.

This one-day event featured speakers from the U.S. Centers for Disease Control and Prevention (CDC) as well as NEMPU-2 public health experts.

The purpose of the workshop was to increase health care provider awareness of an emerging public health risk to better protect the health of Sailors, Marines, and family members under their care.

Fifteen public health and pest management professionals came together to learn the most current information regarding the biological and clinical aspects of Zika transmission, personal protective measures required for service members and their families, impact on global operations, and how military installations are preparing for Zika. The evolution also included a hands-on demonstration of equipment used in the military for surveillance, control and identification of *Aedes aegypti* and *Aedes albopictus* mosquitoes, the vectors responsible for the viral transmission of Zika.

> **“The scientific community’s understanding of Zika virus increases on a near daily basis.”**

“The scientific community’s understanding of Zika virus increases on a near daily basis; it can be difficult for health care providers to keep up with the latest scientific updates as well as evolving public health guidelines and Department of Defense (DoD) policy,” said Lt. Cmdr. Lucas Johnson, Preventive Medicine Officer. “We partnered with the CDC in creating this course to deliver the most up-to-date knowledge required for operational health care providers and other public health professionals to keep their people healthy.”

Lt. Cmdr. Jinaki Gourdine, NEPMU-2 Entomologist, added, “It is important that we do all we can to protect the health and safety of our service members, and we must continue our vigilance to reduce exposure of Zika to Forces operating in areas where the disease is present.”

Attendees had the opportunity to handle special equipment used in control and surveillance of *Aedes* mosquitoes. For many, it was the first time they had seen a mosquito under the microscope to observe their physical features. “It’s surprising to see how a small insect, the *Aedes* mosquito, can cause such profound damage within a community,” said Hospital Corpsman 1st Class Hasson Herbert, NEPMU-2 Preventive Medicine Technician.

The workshop aligns with DoD, Navy, and NEPMU-2 initiatives to communicate risk and control measures to attenuate public health threats to service members, their dependents, and civilian personnel across the globe.

“In the wake of heightened public concerns over the spread of the Zika virus, this workshop was important in bringing together key stakeholders and experts to address our current understanding of this disease and discuss preparedness strategies that include prevention efforts to mitigate risk to our operational forces at home and abroad,” said Cmdr. Danielle Hicks, NEPMU-2 Acting Officer in Charge.

For more news from NEPMU-2, visit **http://www.med.navy.mil/sites/nmcphc/nepmu-2/Pages/default.aspx**

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HM2 Javier MorenoMartinez Receives Excellence in Service Award

By Hospital Corpsman 1st Class Feng Xu, Navy Environmental and Preventive Medicine Unit Five, Public Affairs

Bravo Zulu to Hospital Corpsman 2nd Class Javier MorenoMartinez, Preventive Medicine Technician from the Navy Environmental and Preventive Medicine Unit (NEPMU) 5 and a native of Lindsay, California.

HM2 MorenoMartinez was presented the 2016 League of United Latin American Citizens (LULAC) Excellence in Service Award during the 87th LULAC National Convention and Exposition, held in Washington, D.C. on July 14.

The LULAC Excellence in Service Award honors military members and Department of Defense (DoD) civilian employees, who have supported the LULAC priorities as well as the DoD mission.

"It is quite an honor having someone at our command such as Petty Officer MorenoMartinez," said Cmdr. Shelton Lyons II, NEPMU-5 officer in charge. "Not only does he strive to set the example at our command, he does the same throughout the civilian public. He is the type of character-driven leader that is required in our Navy and in our communities."

MorenoMartinez was extremely grateful for his selection as the 2016 award recipient.

"I'd like to thank my chain of command for nominating me for the 2016 LULAC Award, my family for their unwavering support and my fellow Sailors; being Latino is much more than speaking Spanish," he said. "It is belonging to an entire culture rich in history, diversity and strong family values, which drives us to succeed. I've been granted the opportunity to pursue my American dream and have been blessed to be able to serve my community in return."

Read the full story here: **http://www.navy.mil/submit/display.asp?story_id=95681**

Awards

Bravo Zulu to Captain Althoff for receiving the CAPT Joy Bright Hancock Senior Officer Leadership Award!

Promotions

Congratulations to the following Sailors who were advanced to Senior Chief Petty Officer:

HMCS Ingram, *NEPMU-7*
HMCS Bia, *NEPMU-5*
HMCS Armedariz, *NEPMU-5*

Congratulations to the following Sailors who were advanced to Chief Petty Officer:

HMC Pallas, *NEPMU-2*
HMC Brizuela, *NEPMU-5*
HMC Laxton, *NEPMU-6*
HMC Murphy, *NEPMU-7*
HMC Castilleja, *NEPMU-7*

In Case You Missed It...

Navy and Marine Corps Public Health Center Releases Updated ShipShape Program

By NMCPHC Health Promotion and Wellness Staff

The Navy and Marine Corps Public Health Center (NMCPHC) announced the release of an updated ShipShape Program, Aug. 16. The ShipShape Program is the official Navy weight-management program designed to assist active duty and reserve military service members, beneficiaries, and government civilians with making healthy behavior changes in order to lose weight.

Read the full story here: **http://www.med.navy.mil/sites/nmcphc/health-promotion/Pages/shipshape.aspx**

Norfolk Sailor Recognized as Military Times Sailor of the Year

By Lt. Sarah Godwin, Navy Environmental Preventive Medicine Unit Two, Public Affairs

Navy Environmental and Preventive Medicine Unit Two (NEPMU-2) Preventive Medicine Technician Hospital Corpsman 1st Class Samuel Johnson is a 2016 recipient of the Military Times Service Member of the Year Award. Johnson received the award that includes a scholarship, in large part for his work with Team Red, White and Blue (RWB).

Read the full story here: **http://navymedicine.navylive.dodlive.mil/archives/10918**

(Courtesy photo via Military Times)

Navy Environmental and Preventive Medicine Unit Seven Celebrates First Change of Charge

By Hospital Corpsman 2nd Class Jay Cherluck, Navy and Environmental Preventive Medicine Unit Seven, Public Affairs

(Photo by Capt. Althoff)

Cmdr. Karen Corson relieved Capt. Juliann Althoff as officer in charge of Navy and Environmental Preventive Medicine Unit (NEPMU) 7 at Naval Station Rota July 8. The ceremony marked the first change of charge for NEPMU-7 since being recommissioned in 2014. NEPMU-7's last change of charge occurred in 2003, just three years before the unit was decommissioned in 2006.

Read the full story here: **http://www.navy.mil/submit/display.asp?story_id=95644**

Ongoing Collaboration Results in Improvements to Mental Health Care For Beneficiaries

By Navy and Marine Corps Public Health Center, Public Affairs

The Navy and Marine Corps Public Health Center (NMCPHC) announced a project with the U.S. Navy Bureau of Medicine and Surgery (BUMED) to identify areas for improving the Behavioral Health Integration Program (BHIP) June 14. The project focuses on improving utilization of and access to Navy Internal Behavioral Health Consultants (IBHCs) in the BHIP.

Read the full story here: **http://www.navy.mil/submit/display.asp?story_id=95218**

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Risk Communications Flash Cards App for Smartphones

Sharpen your Risk Communications IQ with the Risk Communciations Flash Cards App for your smartphone.

The NMCPHC Risk Communications Flash Cards App is available for download on Google Play and the Apple App Store. This interactive mobile app allows you to practice risk communications skills so you are ready when you need to communicate sensitive topics to your staff and/or stakeholders. Download it today.

Join the NMCPHC LinkedIn Group

It's official! NMCPHC is now on LinkedIn.

Open to our stakeholders, staff, customers and aspiring employees, the NMCPHC LinkedIn group will allow members to share knowledge and ideas, network and hold discussions that further our common mission of protecting the health and readiness of our nation's service members and their families.

We strongly encourage you to join the group, participate in discussions, ask questions and invite others to learn more about the innovative work happening here at NMCPHC.

If you have any questions about the NMCPHC LinkedIn group, please contact the NMCPHC LinkedIn administrators via email at NMCPHC-PAO@med.navy.mil

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